ENGINEERS FOR WAR AND PEACE

Shorter Time for a Degree

Our program for training engineers for the war is in full swing. You can now complete the usual four-year course in any of the branches of engineering in slightly less than three calendar years. This is made possible not by leaving out subjects or devoting less time to each subject but by eliminating vacation periods and keeping the University open fifty-one weeks out of the year. The University has a Long Session—from September to June—a Summer Session of two six-weeks terms, and an Intersession of three weeks between the Summer Session and the Long Session. You may attend any one or all of these sessions, but by continuous attendance you can complete the full program and receive your degree in the shorter period of time. This continuous-study program began in June, 1942, but you may enter in September—or February, if you will not finish your high-school course until then—and still take advantage of the hurry-up plan for a degree. While the primary purpose now is to train engineers to meet the demands of war activities, the instruction you receive will be equally valuable when peace comes.

The Director of Selective Service, because of the need for technically trained men in war industries, has recommended that local draft boards defer engineering students of draft age who have successfully completed about half (freshman and sophomore years) of their courses toward an engineering degree. Or if you enlist in one of the reserves, explained on the last page, and make normal progress, you may finish your college work before going to active duty.

Wartime Needs

The wartime demand for persons trained in engineering exceeds 50,000 annually, whereas the engineering colleges of America have been graduating only 14,000 a year. Nearly all the branches of the armed forces require a large number of engineers, in addition to the unprecedented requirements by such war industries as aircraft factories, shipyards, munitions plants, and engine builders. The College of Engineering is helping to meet this need in two ways: by operating the College on a continuous basis for fifty-one weeks out of the year, thus enabling students to complete their degrees sooner, and by coöperating with the Government in the Engineering, Science, and Management War Training program and in the Civilian Pilot Training program. Because of the great need for persons in the essential industries and to relieve the acute shortage of technical men, employment is being offered to those who have had two years of engineering or equivalent short-term engineering war-training courses. Women are also being taken into war industries, and some are being trained here at the University both in the regular course work and in the special war-training courses.

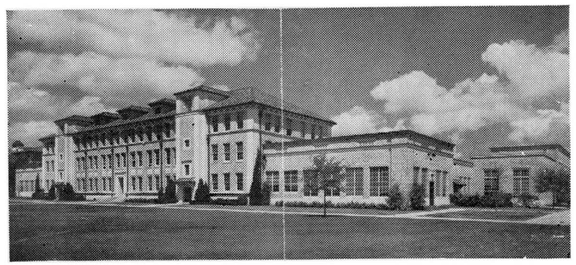
How To Get In

Admission requirements to the College of Engineering for any of the courses in engineering are high-school graduation and 15 acceptable units, including 3 in English, 2 in algebra, 1 in plane geometry, ½ in solid geometry, 1 in physics, and 7½ electives, 3½ of which must be from the following fields: English, mathematics, language, social science, natural science, or fine arts. If you lack physics or some of the mathematics, you may be able to enter and make up the subject you lack by taking non-college credit courses here during your first semester. To find out exactly how you stand, have your principal send your high-school certificate to the Registrar, The University of Texas, Austin, Texas.

In addition to having the required admission units, you should like mathematics, physics, and other sciences, and have an aptitude for using tools and instruments before taking an engineering course, for persons with those qualities are more likely to succeed in the engineering profession.

THE UNIVERSITY OF TEXAS

College of Engineering



Branches of Engineering

The College of Engineering offers eight bachelor's degrees: the Bachelor of Architecture and the Bachelor of Science in Aeronautical, Architectural, Chemical, Civil, Electrical, Mechanical, and Petroleum Engineering.

Aeronautical Engineering

Aeronautical engineering is a separate department in the College of Engineering, with a degree program which leads to the Bachelor of Science in Aeronautical Engineering. Regular University courses in aeronautical engineering have been given since 1926, although aeronautical training began at the University in World War I when, in coöperation with the Army Air Corps, the School of Military Aeronautics was established on the campus to train pilots.

The present course trains students for all types of work in aeronautical engineering—in aircraft plants, in government research laboratories, and in aircraft maintenance and operation with the armed forces. The demand for well-trained men is great, and the University is meeting this need by thoroughly training its aeronautical engineering students in the fundamentals of engineering sciences and their application to the design of airframes, aircraft engines, and propellers. An aeronautical engineer with this training can render very valuable service to his country in wartime and also be in an enviable position with regard to the expansion of commercial aviation which will inevitably follow the conclusion of the war.

Architecture and Architectural Engineering

In Panama, Alaska, Porto Rico, Hawaii—all over the world—graduates of this department are filling responsible positions in expediting our war effort. In shipyards and in aircraft plants, in planning and constructing bases and camps, the versatility and adaptability of men and women trained in architecture and architectural engineering have been demonstrated.

The department offers work in two branches of architecture, each leading to a degree. The Bachelor of Architecture degree, a five-year program, can now be completed in a little less than four years. Students interested in planning and designing bridges, buildings, and all types of structures will want this program. It emphasizes the artistic and includes courses in architectural design, architectural history, drawing—freehand, life, and water color—and clay modeling. Students more interested in construction work will want the architectural engineering program, a four-year degree plan which can now be completed in a little less than three years. This program emphasizes the engineering sciences relating to building construction, mathematics, physics, hydraulics, thermodynamics, and mechanics. Both programs provide training in specification writing, plumbing, lighting, working drawings, and heating and air conditioning.

Present indications are that there will be a big demand for trained persons after the war, particularly those with a scientific approach to housing and city planning.

Chemical Engineering

A chemical engineer is concerned with plants in which materials undergo chemical and physical changes. The industries in which he works are not only those producing purely chemicals—chlorine, magnesium, soda ash, toluene, etc.—but also those producing such things as cement, soap, gasoline, lubricating oil, rubber and artificial rubber, and plastics.

The expansion of the chemical and allied industries in Texas has caused an unprecedented demand for qualified chemical engineers. The Department of Chemical Engineering, the fourth largest in the nation, has just moved into a new laboratory building. Much of the equipment is new, and the curriculum has been revised to meet the needs of new Texas industries. Graduates of this department are engaged in research, development, design, construction, and operation in plants throughout the nation to supply the materials not only essential to the war effort, but also to meet the needs of a peacetime economy. The need for chemical engineers will not cease at the end of the war; the chemical industries of the state are so diversified that the demand for qualified men will continue.

Civil Engineering

Civil engineers design, construct, and maintain airports, highways, railroads, bridges, dams, levees, canals, buildings, pipelines, sewer systems, and water supply systems. The University department offers excellent training for this great variety of activities. Its graduates are employed throughout the country, both in civilian life and in the war effort. Many are serving their country in the armed forces or in private companies by planning and constructing military roads and bridges, plotting and building army and navy airfields, working out methods of piping water to army camps, and installing sanitation equipment to help keep the soldiers in perfect health.

Civil engineering activities have expanded greatly during the past twenty-five years, are expanding now with war demands, and will continue to expand during the reconstruction period to follow when the world seeks men to rebuild cities, highways, and railroads.

Electrical Engineering

University courses in electrical engineering provide training that enables students to take advantage of the widespread opportunities in this field. Electrical energy in some form is used by practically every industry. The total electricity generating capacity in this country is now approximately 50 million horsepower, and the output is well over 100 billion kilowatt hours. Electrical engineers are needed to supervise the production and use of this vast energy. They design, build, and manage power plants, transmission lines, substations, and distribution systems. Many work in factories that use electrical machinery. Some are engaged in the invention and development of new kinds of electrical apparatus—motors, generators, circuit breakers, transformers, household appliances, and a multitude of labor-saving devices—while others are consulting engineers for those who use such equipment. In the field of illumination, engineers design lighting systems for highways, streets, airports, and buildings, which all together use almost one billion lamp bulbs every year.

Communication is probably the most rapidly growing electrical field today. The telephone and radio are used almost universally; much research work is being done here. There is a tremendous need for radio engineers in the armed forces, and the Army Signal Corps has many jobs for the man who knows radio.

Mechanical Engineering

Mechanical engineering includes the work related to steam power plants, steam, oil, and gas engines, turbines and pumps, aeronautics, heating, air conditioning, refrigeration, machine design and drawing, and manufacturing of all kinds. The University offers complete courses in all of the various phases of mechanical engineering. Mechanical engineering—the engineering of machines—has always attracted the imagination of young men. Here they are trained for positions in public utilities and private industries, in the planning, construction, operation, and maintenance divisions of the company; for administrative posts in industry; for private practice in mechanical engineering; and as agents and sales engineers for mechanical equipment companies. In war the mechanical engineer's abilities are of vital importance to his country both in war industries and in the armed forces.

Petroleum Engineering

The new Petroleum Engineering Building at the University is one of the finest buildings in the United States devoted exclusively to petroleum engineering instruction and research.

The four-year course in petroleum engineering, which can now be completed in slightly less than three years by continuous study, gives fundamental training in the application of the various sciences to the production of petroleum and natural gasoline. Graduates of this department have found employment with oil companies, government bureaus, and in various branches of the war industries. Many are commissioned officers in the armed forces.

Because oil is a vital product in the war emergency and will be so in the peace era to follow and because Texas produces 50 per cent of the nation's oil, the role of petroleum engineers in this state is becoming more and more significant.

Enlistment in the Reserve Corps of the Armed Forces

All branches of the armed forces—Army, Army Air Forces, Navy, Naval Aviation, Marine Corps, and Coast Guard—are offering opportunities to capable students who are registered in The University of Texas and who can meet the physical requirements to enlist in the appropriate reserve corps and continue in college. This applies to all undergraduates—freshmen, sophomores, juniors, and seniors. The primary purpose of enlisting college students in the various reserve corps is to furnish a source of future officer material.

In general, the plan will get under way with the opening of the Long Session, although emergency cases can be handled now. Again, in general, freshmen will be deferred four years; sophomores, three; juniors, two; and seniors, one.

By the time school opens in September a pamphlet describing the offerings of all six of the armed services has been promised. In October a Board of Officers representing the six services will come to the University and at one convocation each will explain the opportunities his service offers. These officers will also be available for personal conferences. A few weeks later a recruiting party will come to the campus to enlist those who are interested.

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